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Pioneering Prosthetics

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Pioneering Prosthetics

Duane Nelson, along with a friend and colleague, Jody Riggs, spent three months in 2007 assisting amputees along the Thailand/Burma (Myanmar) border. Their specialized training in prosthetics and orthotics changed the lives of the amputees, and the families and communities of these survivors. With the aid of local actors, Nelson and Riggs helped the survivors travel the road to recovery.

by Duane Nelson [British Columbia Institute of Technology]

Of all the people I met during the three months I spent providing artificial limbs along the Thailand/Burma (Myanmar) border, one face remains fresh in my mind. It is the face of 30-year-old Si Luoong.¹ He told me his story as I sat in the dim, dirt-floor hut measuring and casting his limb for a new prosthesis. Using a local translator, he said:

“Six years ago, I was taken prisoner by the ruthless Burmese military regime because I was born into an ethnic minority. The regime forced me to carry their ammunition, and I was severely under-fed for several weeks. My position was to walk in front of their group as they traveled through the jungles; essentially, I was being used as a human landmine shield.”

Tragically, Si Luoong became just that—after he stepped on a landmine, his body was traumatized and his left leg was mutilated below the knee. “Because I no longer could serve any purpose to the military, they left me for dead right where I had dropped,” he says.

As Luoong agonized in solitude under the scorching sun, his life drained slowly from his distressed body. Darkness set in, and he contemplated if he would ever walk again. “I wondered if I would ever see my family again and if I would even live to see the light of day tomorrow.”

Si Luoong was found several days later by local villagers, and they transported him across the border to Chiang Mai, Thailand. He was hospitalized in critical condition and given a feeding tube for survival since he had been without food or water for so long.

“It was in this condition that I awoke to realize my leg had been amputated. Immediately I feared not being able to work and provide food for my family.”

Instead of going home, where he felt sure he would find his family either dead or dispersed to another community, Luoong settled into a semi-secure border town protected



Duane Nelson is standing with the courageous men of Burma that received new prosthetic legs through his efforts and those of Clear Path International, the Shan Health Committee, the Mae Tao Clinic and Jody Riggs.
ALL PHOTOS COURTESY OF THE AUTHOR

by his ethnic minority’s army. He was never able to find his family members.

Without other survival options, he has labored on farms and in the jungle for the last six years. The first two years he spent on crutches, and the last four he used a second-hand prosthesis. When my fingers smoothed and shaped the plaster bandage over the contours of Si Luoong’s limb, it warmed his leg as it hardened. Having been an amputee for six years, this was his first time experiencing this sensation and I saw his eyes fill with emotion at the anticipation of receiving his first-ever custom-made prosthesis.

Clear Path International

Unfortunately, Si Luoong’s story is not unique. In fact, in his current village alone, with a population of just 2,000, 27 men are amputees, all of them as a result of landmines and other remnants of civil war. The provision of Si Luoong’s prosthesis was made possible by Clear Path International, a nonprofit organization dedicated to providing assistance for landmine- and bomb-accident survivors, their families and their communities. This assistance takes the form of direct medical and social services to survivors and their families, as well as equipment support to



Assessment of residual limb prior to casting. Bony prominences are traced in order to custom modify the prosthetic socket for improved comfort.

hospitals. CPI is currently active in Vietnam, Cambodia, the Thailand/Burma border and, most recently, Afghanistan.

CPI was formed by a group of friends with a wealth of relief-work experience in Vietnam and other parts of Asia. Though CPI was originally created as a landmine- and bomb-removal organization, the board of directors recognized the need for a professional nonprofit organization to undertake landmine and unexploded ordnance victim-assistance activities in Southeast Asia. In this way, CPI makes a

compassionate attempt to redress the destructive legacy of armed conflict and help families get back on track after often devastating, if not deadly, accidents.

Heeding the Call to Action

In the fall of 2007, I enrolled in the specialized Prosthetics and Orthotics Program at the British Columbia Institute of Technology in Vancouver, British Columbia, Canada. Within this program I found a very good friend and colleague, Jody Riggs, who shares my passion for helping landmine survivors. We both dreamed of using our new skills to provide prosthetic legs for those less fortunate who live in war-torn nations around the world.

CPI created an opportunity for us to bring our prosthetics skills to an area of the world with great need; one in which fear, cruelty, guns, hunger and landmines are a part of life for the men, women and children who live there. This place was the Thailand/Burma border. Burmese ethnic groups have been and continue to be violently forced from their villages by the military *junta*. They travel through a jungle littered with landmines in order to reach some kind of temporary safety in or near Thailand.

My colleague and I were privileged to gain access to a highly restricted ethnic-minority village along the border and take prosthetic measurements and casts for 18 lower-limb amputees. Artificial legs were then built from the casts at the Mae Tao Clinic in Thailand. Also known as Dr. Cynthia's Clinic, MTC was founded and is run by ethnic-minority refugees from Burma. The 18 legs were fabricated using vacuum-molded polypropylene provided by CPI and assembled together with prosthetic feet from the Handicap International production site in Cambodia.



Jody Riggs (left) visiting a landmine survivor at his home before leaving the region to fabricate his new prosthesis.



Laminating a prosthetic socket by a local Prosthetic Technician and a prosthetics student.

Quite a Comparison

Three weeks after the initial consultation, we journeyed back to the remote village to fit the new, custom-made prostheses. For most of these men, it was the first time they had ever consulted with a prosthetist and, sadly, likely the last. Each transtibial prosthesis cost just US\$40 in materials. This is contrasted to a minimum of \$500 in materials for a transtibial prosthesis in Canada or the United States.

The Prosthetics Department Manager at MTC is an astounding and committed man. His experience in fitting artificial limbs extends beyond 20 years. He does not make money, and will never be able to buy his family a truck, a home or a vacation. His workshop lacks government funding and only survives by donations and external funds. His facility is built on rented land, and consequently lacks long-term stability, and his lim-

ited budget doesn't allow for expensive tools. The prosthetic technicians make do with their space and use what they have. There are no prosthetics-specific grinding machines, no ventilation extraction for harmful chemicals and dust, no glass windows, no waiting room, no casting room and no privacy for patients.

Despite lacking these luxuries, the clinic is very productive, effectively fabricating 200 functional prostheses per year, free of charge. They also train 10 new prosthetic technicians, the majority of whom are amputees themselves, in that same period.

Approximately three kilometers (two miles) away there is another prosthetics workshop at the Mae Sot Municipal Hospital in Mae Sot, Thailand. This is a Thai government-funded facility. The manager there parks his beautiful new four-wheel-drive truck out front and steps into his immaculate and pol-

ished lab. All the most specialized, advanced and brand-name equipment lines the walls. There is a ventilated grinding room, an out-fitted casting room, a well-stocked storage room and a large personal office with a desk, computer and phone. This is a fantastic place to work for the manager—he's got it made; life is good. Everything is funded by the government and the advanced prostheses are provided free-of-charge to Thai citizens. The only problem is there is no work. He sits around all day. Only about 50 prostheses are made there in a year, because he cannot welcome non-citizens, refugee landmine survivors, into his clinic. On his geographic doorstep lies one of the greatest prosthetic needs in the world: Burma. He is, regrettably, legally bound to charge refugees up to \$665 for a leg, which none of them can afford.

Our Experience

As prosthetists that worked on the Thailand/Burma border, we observed firsthand the need to rehabilitate the victims who have survived the loss of limbs from explosive remnants of war.² The compassion and motivation of these survivors to help each other achieve a better quality of life is an inspiration for us to continue our contributions of providing resources and education. ♦

See Endnotes, page 110



Duane Nelson trained to become a Certified Prosthetist at the British Columbia Institute of Technology in Vancouver, BC, Canada, and is currently serving as a Prosthetics Intern at the Saskatchewan Abilities Council in Saskatoon, SK, Canada. He and his good friend, Jody Riggs, who shared the experiences in this article, desire to continue serving those affected with limb loss in developing nations.

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